1981

Piezometer logs

Cal R. Fremling
Winona State University

LOG OF BORING

BRAUN ENGINEERING TESTING

PROJECT:
S82-48 SOILS INVESTIGATION
Levee Project - Reach E-2
Winona, Mn.

BORING: E-1
LOCATION:
DATE: 9-21-82
SCALE: 1" = 4'

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
	1.5	CL-ML	CLAYEY SILT, dark brown, moist. (Fill)			
	6.0	SP	SAND, fine grained, light brown, moist. (Fill)	22		
	7.0	CL	SILTY CLAY, dark brown, slightly *	7		* organic, moist. (Fine Alluvium)
			Water level not encountered with 7' of hollow-stem auger in ground.			
			Water level not encountered to cave-in depth of 4.1' immediately after withdrawal of auger.			

(See Report and Standard Plates for evaluation and descriptive terminology.)

LOG OF BORING

BRAUN ENGINEERING TESTING

PROJECT: S82-48 SOILS INVESTIGATION
Levee Project - Reach E-2
Winona, Mn.

BORING: E-2

LOCATION:

DATE: 9-21-82

SCALE: 1" = 4'

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
	1.5	ML	SANDY SILT, drak brown, moist. (Topsoil)			
	7.5	ML	CLAYEY SILT to SANDY SILT, organic pieces wood debris, gray, wet. (Fill)	7		
	12.0	ML	CLAYEY SILT, slightly organic, black, wet. (Fill)	4		
	14.5	SP-SM	SAND, slightly silty, fine to medium grained, gray, waterbearing. (Alluvium)	9		
			Water level down 10.3' with 14.5' of hollow-stem aguer in ground. Water level down 9.3' immediately after removal of auger.			

(See Report and Standard Plates for evaluation and descriptive terminology.)

LOG OF BORING

BRAUN ENGINEERING TESTING

PROJECT:
S82-48 SOILS INVESTIGATION
Levee Project - Reach E-2
Winona, Mn.

BORING: E-3

LOCATION:

DATE: 9-21-82

SCALE: 1" = 4'

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
		ML	SILT, gray, moist.			
	2.5		(Fill)			
		ML	CLAYEY SILT, slightly organic, gray mottled with red, wet.			
			(Fine Alluvium)	4		
	7.0					
		SC	SANDY CLAY, slightly organic, dark brown, wet.			
			(Alluvium)			
	10.5			3		
		SP	SAND, fine to medium grained, gray, waterbearing.			
			(Alluvium)			
	14.0			11		
			Water level down 9.4' with 14' of hollow-stem auger in ground.			
			Water level not encountered to cave-in depth of 6.8' immediately after withdrawal of auger.			

(See Report and Standard Plates for evaluation and descriptive terminology.)

LOG OF BORING

BRAUN ENGINEERING TESTING

PROJECT:
S82-48 SOILS INVESTIGATION
Levee Project - Reach E-2
Winona, Mn.

BORING: E-4
LOCATION:
DATE: 9-21-82
SCALE: 1" = 4'

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
		ML	SILT , brown, moist.			
	2.0		(Topsoil)			
		ML	CLAYEY SILT, slightly organic, gray mottled with red, wet. (Fine Alluvium)	4		
	8.0					
		SP	SAND, fine to medium grained, gray, waterbearing. (Alluvium)	9		
	14.0			8		
			Water level down 8.8' with 14' of hollow-stem auger in ground.			
			Water level not encountered to cave-in depth of 6.8' immediately after withdrawal of auger.			

(See Report and Standard Plates for evaluation and descriptive terminology.)

LOG OF BORING

BRAUN ENGINEERING TESTING

PROJECT:
S82-48 SOILS INVESTIGATION
Levee Project - Reach E-2
Winona, Mn.

BORING: E-5
LOCATION:
DATE: 9-21-82
SCALE: 1" = 4'

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
	1.5	CL	SILTY CLAY, dark brown, moist. (Fill)			
	6.5	SP	SAND, fine to medium grained, brown, wet. (Fill)	9		
	13.0	SP	SAND, fine to medium grained, some fine to medium grained gravel grayish brown, waterbearing. (Alluvium)	9 8		
			Water level down 6.4' with 3' of hollow-stem auger in ground. Water level not encountered to cave-in depth of 3.5' immediately after withdrawal of auger.			

(See Report and Standard Plates for evaluation and descriptive terminology.)

ELEVATIONS of THE TOP of CMP LID ON RIVERBEND PIEZOMETERS

	ELEVATION
E-1	651.64
E-2	655.08
E-3	653.74
E-4	652.40
E-5	649.35
E-6	654.46
E-7	657.51
E-8	666.65

Robert J Bollant
Dir of P.W

LETTERING

F POST ONLY)

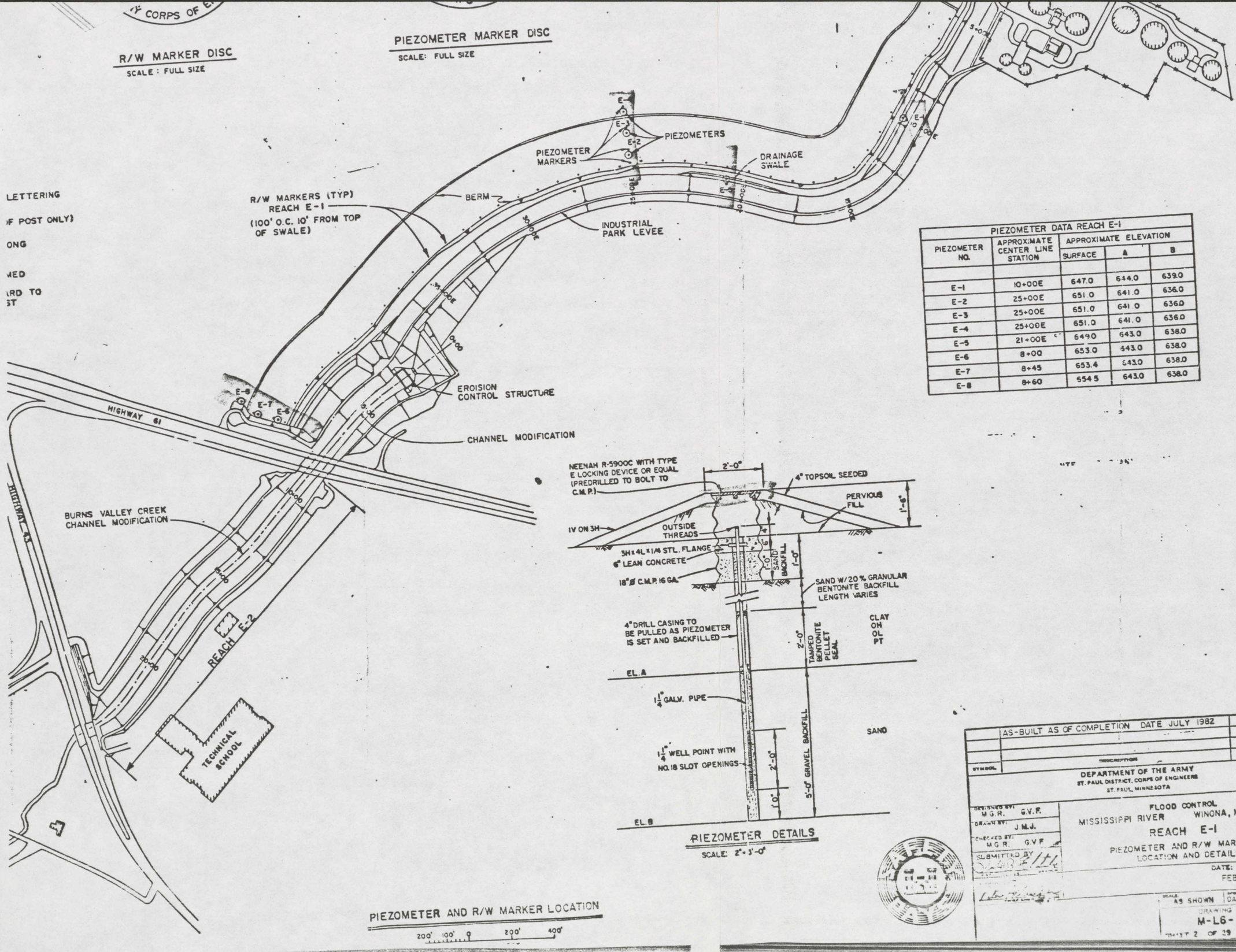
ONG

MED

RD TO
ST

R/W MARKER DISC
SCALE : FULL SIZE

PIEZOMETER MARKER DISC
SCALE: FULL SIZE



PIEZOMETER AND R/W MARKER LOCATION
200' 100' 0 200' 400'

PIEZOMETER DATA REACH E-1				
PIEZOMETER NO.	APPROXIMATE CENTER LINE STATION	APPROXIMATE ELEVATION		
		SURFACE	A	B
E-1	10+00E	647.0	644.0	639.0
E-2	25+00E	651.0	641.0	636.0
E-3	25+00E	651.0	641.0	636.0
E-4	25+00E	651.0	641.0	636.0
E-5	21+00E	649.0	643.0	638.0
E-6	8+00	653.0	643.0	638.0
E-7	8+45	653.4	643.0	638.0
E-8	8+60	654.5	643.0	638.0

PIEZOMETER DETAILS
SCALE: 2" = 1'-0"

AS-BUILT AS OF COMPLETION DATE JULY 1982

SYMBOL	DESCRIPTION	DATE	APPROVAL

DEPARTMENT OF THE ARMY
ST. PAUL DISTRICT, CORPS OF ENGINEERS
ST. PAUL, MINNESOTA

DESIGNED BY: M.G.R. G.V.F.
DRAWN BY: J.M.J.
CHECKED BY: M.G.R. G.V.F.
SUBMITTED BY:

FLOOD CONTROL
MISSISSIPPI RIVER WINONA, MINNESOTA
REACH E-1
PIEZOMETER AND R/W MARKER LOCATION AND DETAILS

DATE: FEBRUARY 1981

SCALE: AS SHOWN | CONTRACT NO. DACW37-82-R-0013

DRAWING NUMBER
M-L6-10/42

SHEET 2 OF 29

data from Bob Bollard
June 19, 1990

Piezometer — ground level

1 — 650.6
2 — 653.9
3 — 652.3
4 — 650.9
5 — 648.0
6 — 655.3
7 — same 65-7.5 ?
8 — 664.6